

Medical Image of the Week: Pneumatocele



Figure 1. Portable AP film showing a large cystic lesion in the left lower lobe in addition to small bilateral pleural effusions and adjacent consolidation.



Figure 2. Axial enhanced CT scan section showing a large cystic space with an air-fluid level with adjacent consolidated atelectasis. No perceptible wall is seen.

A 50-year-old man presented with polymicrobial pneumonia which included *Proteus Mirabilis*, *Enterobacter Cloacea* and MRSA pathogens. A large cystic lesion with an air-fluid level was found on chest imaging in a region of pneumonia (Figure 1). There was associated mass effect onto the adjacent lung. No perceptible wall was noted which would be more associated with a cyst rather than a cavity or abscess. Directed aspiration of this lesion resulted in decompression without further complication. Minimal sterile fluid was recovered. Therefore the proposed diagnosis was a pneumatocele within the setting of infection. Pneumatocelles may be challenging at times to distinguish from a cavity particularly when surrounded by airspace disease however merit consideration in the differential diagnosis particularly in the absence of findings of a thick irregular wall.

The exact mechanism causing development of a pneumatocele is not known, but believed to develop due to a check valve type bronchiole or bronchiolar obstruction (1). Pneumatocelles most commonly undergo spontaneous remission within weeks to months without any known long term implications. Complications occur rarely and include pneumothorax, tension pneumatocele, and secondary infection of a pneumatocele. Usual treatment is directed towards the underlying pneumonia with appropriate antibiotics. In rare cases percutaneous drainage may be necessary and is ideally performed with a small bore catheter to minimize trauma. The role of positive pressure ventilation in development of a pneumatocele is unclear.

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Reference

1. Lysy J, Werczberger A, Globus M, Chowders I. Pneumatocele formation in a patient with *Proteus mirabilis* pneumonia. *Postgrad Med J*. 1985;61(713):255-7. [\[CrossRef\]](#) [\[PubMed\]](#)